

**What is claimed is:**

1. A ground-signal-ground (GSG) test structure for production measurement of RF device performance in integrated circuits, comprising one pair of signal pads (S1, S2) and two pairs of ground pads (G1a, G2a; G1b, G2b), wherein all said six pads (G1a, G2a, S1, S2, G1b, G2b) are arranged linearly.
2. The test structure of claim 1, wherein each of said pairs (G1a, G2a; S1, S2; G1b, G2b) comprising a first pad (G1a, S1, G1b) connected to a first RF probe (11) and a second pad (G2a, S2, G2b) connected to a second RF probe (12).
3. The test structure of claim 2, wherein all said first RF probes (11) are connected to a first port, and all said second RF probes (12) are connected to a second port.
4. The test structure of claim 3, wherein said pair of signal pads (S1, S2) is located between said two pairs of ground pads (G1a, G1b; G2a, G2b).
5. The test structure of claim 4, wherein said first pads (G1a, S1, G1b) and said second pads (G2a, S2, G2b) are positioned alternately.
6. The test structure of claim 5, wherein a device under test (DUT) (14) is placed between said pair of signal pads (S1, S2).
7. The test structure of claim 6, wherein said pair of signal pads (S1, S2) are placed on an upper metal layer (13) and said two pairs of ground pads (G1a, G1b; G2a, G2b) are placed on a lower metal layer (15).
8. The test structure of claim 7, wherein each of said two pairs of ground pads (G1a, G2a; G1b, G2b) has a common single pad opening.
9. The test structure of claim 8, wherein a pad pitch is 100  $\mu\text{m}$  and a probe pitch is 200  $\mu\text{m}$ .

10. An arrangement of GSG testing pads comprising one pair of signal pads (S1, S2) and two pairs of ground pads (G1a, G1b; G2a, G2b), wherein all of said pads (G1a, G2a, S1, S2, G1b, G2b) are arranged linearly.
11. The arrangement of claim 10, wherein all of said pads (G1a, G2a, S1, S2, G1b, G2b) are placed in a saw lane of a wafer.
12. The arrangement of claim 11, wherein said pair of signal pads (S1, S2) is located between said two pairs of ground pads (G1a, G1b; G2a, G2b).
13. The arrangement of claim 12, wherein each of said pairs (G1a, G2a; S1, S2; G1b, G2b) comprises a first pad (G1a, S1, G1b) connected to a first RF probe (11) and a second pad (G2a, S2, G2b) connected to a second RF probe (12).
14. The arrangement of claim 13, wherein all said first RF probes (11) are connected to a first port, and all said second RF probes (12) are connected to a second port.
15. The arrangement of claim 14, wherein said first pads (G1a, S1, G1b) and said second pads (G2a, S2, G2b) are positioned alternately.